PROJECT MANAGEMENT OFFICE
&
PROJECT PORTFOLIO MANAGEMENT OFFICE
APPLICATION IN A GREEK COMPANY
CASE STUDY: TIF-HELEXPO SA

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Abstract

This dissertation was written as part of the MSc in Management at the International Hellenic University.

The problem that exists and contributed to the writing of this dissertation is the lack of knowledge about the Project Management Office and Project Portfolio Management Office concepts in the Greek company context. There is a deficient use of project management in Greece since it is firmly associated to the construction industry which is in decline due to the economic recession.

The scope of this dissertation is to extensively analyze the Project Management Office and Project Portfolio Management Office, to highlight their features and their relationship to project performance and to try to apply these in the defective Greek industry context.

The approach that is used is the theoretical analysis of the Project Management concepts based in the already existing literature, the analysis of the situation in Greece and the application of Project Management in a Greek company namely TIF-HELEXPO SA. The practical application is an actual project in the company. The project refers to the integrated energy design of the company's facilities and it is suggested to create a Project Management Office as a department with the company that could also offer the services a Project Portfolio Management Office offers.

The contribution of this dissertation will be in a theoretical basis a new interesting use of Project Management in a Greek company and if it is also practically applied it could set the foundation of using Project Management Offices in any kind of company, even in the one that offer pure services.

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Keywords: Project Management Office (PMO), Project Portfolio Management Office (PPMO), PMO and PPMO features and relationship to project performance, PM in the Greek context

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Contents

Introduction

Project Management is a management field that is constantly developing around the world providing plan and solutions to many projects. However in Greece it is still not broadly used by the organizations. Within the Project Management overall structure there is the Project Management Office (PMO) and the Project Portfolio Management Office (PPMO) that are also broadly used contributing to the project performance. These are also two concepts not so advanced within the Greek context.

The goal of this dissertation is to analyze the features of both PMO and PPMO while exploring their contribution to project performance. Moreover, the lattes are examined for the case of a Greek company, namely TIF-HELEXPO SA. TIF-HELEXPO SA is the national exhibition agency of Greece, organizing exhibitions, congresses and cultural events. The company has a typical organizational chart and has a large area consisted of buildings and pavilions used for the exhibitions and other events.

The proposal is to create a Project Management Office within the company, so that it will be responsible for the planning of every project. Also the case study is to use Project Portfolio Management in a specific project that has to be applied in all pavilions or in a number of them. The project that will be used as a case study refers to the energy design of the pavilions.

This dissertation aims to contribute to the acknowledgement of PM in the Greek company index that is does not belong to the construction industry. This will be achieved by applying the theoretical knowledge of Project Management in an actual case study in a Greek company. Hopefully it could also be practically applied in the company and offer a new way to achieve performance through Project Management and specifically Project Management Office.

The dissertation has a theoretical part where the already existing literature is presented. The literature comes from books and published reports concerning the Project Management, the PMO and PPMO. For the practical part of the case study and the implementation of the project management in the chosen project, it will be used the

OpenProj software based on information regarding the company's structure and the integrated energy design methodology that is used in most projects.

Project Management – Analyzing the concepts

Definition of project management

"Project Management (PM) is defined as the application of knowledge, skills, techniques and tools to project activities to meet the project requirements. Project management is accomplished through the application of the project management processes of initiating, planning, executing, monitoring and controlling, and closing". (PMBOK Guide, 2008)

"Projects are temporary organizations, with an intentional death, purposefully designed to provide benefits for a permanent organization or certain stakeholders through complex problem-solving processes" (Söderlund, 2011). However, in spite of their temporary nature, they exist within the boundary of a project-based organization (PBO) offering value for investments through precise knowledge management. A PBO is an organization that produces the majority of its products and services through projects. These products and services can be either for internal or for external customers. A PBO can be either a separate organization or a subsidiary (Turner and Keegan,2000) that both are managing a number of projects (Artto et al., 2011).

Projects have become important tools that are used to result changes and development in organizations (Balck, 1990). That led to a broader utilization of projects through new PM models, while the more effective the PM is, the more likely to achieve organizational performance (Gareis 1990, Lundin 1990). However, it is shown to be difficult to transfer the knowledge in PM and thereafter the success, due to the uniqueness of each project (Jessen, 1992).

The issue on projects contributing to organizational performance has urged analysts to find the factors in the different levels of the organizational structure that associate project with performance. The establishing of a PBO has many benefits assuming that it is collaborating with the projects (temporary project organization). The new ideas, practices, problems and knowledge gained in projects should be transferred to the PBO for reuse (Söderlund and Tell, 2011). Therefore, the PBO has to ensure effec-

tive knowledge sharing to use already successful methodologies and avoid repetition of the same mistakes (Schindler and Eppler, 2003). However, the knowledge transferring might be infective, due to the different levels the projects might be within the company (Swan et al, 2010).

Project management office

The use of this management field, Project Management, has led the creation of other units and departments within the organization. One of these is the Project Management Office. In order to manage all operations and achieve performance, organizations should use these units, such as Project Management Offices (PMO). Thus, they should be examined as contributors from the logical and managerial point of view (Hofman, 2014).

Project Office is a department in an organization responsible to manage projects or a series of similar projects (Ward, 2000) and can be defined as an organizational entity with full time employees to offer managerial, administrative, training, consulting and technical services for project driven organizations (Kwak and Dai, 2000). The Project Manager is the leader in this office. The PMO is transacting more responsibilities, by helping project managers, teams, and various management levels. This assistance might be on strategic and functional decisions, as well as on implementing Project Management practices, methodologies, tools and techniques (Ward 2000).

Recently many organizations and many analysts support the establishment of this office in an organization, in order to increase the PM effectiveness through understanding from earlier projects. Studies have shown that the utilization of project management offices add value to organizations (Dinsmore, 1999; Fleming, 1998; Knutson, 1998; Toney 1997).

Background of the project management office

The use of the PMO has initially appeared in the 1930's (Wells, 1999), however the last years the concept of PMOs has reemerged due to its high demand within companies. There have been studies already from researchers discussing the key factors to

achieve a project office' long term vision (Fleming and Koppelman, 1998), analyzing how the project office assists project teams, studying the PMO manager's role and finally designing guidelines that will fit a PMO into different size organizations (Bates, 1998; Whitten, 2000; Knutson, 1998; Dinsmore, 2000).

PMO is seen as the foundation, on which the PM implementation should be based, as well as a supportive factor that applies PM tools and methods successfully. Some PMOs report to senior managers, whereas others are within departments of the organizations (Wells, 1999). There are three typical PMO structures within the organizations, regardless of the degree of control and influence they have on projects. The first is the supportive PMO, the second the controlling PMO and the third the directive PMO. The supportive PMO provides support as it holds the knowledge, best practices, access to data and expertise on projects. This structure mainly is established in organizations that exert low control in PM. The controlling PMO is like the supportive PMO in a more compulsory perspective. This means that all practices and methodologies that are consultative provided should also be applied and controlled through reviews. The directive PMO, which is more often seen in large organizations, is responsible for the implementation of all PM practices and standards gained from past experiences is obliged to allocate all available resources and is solely in charge of managing the project. Further analysis of the characteristics of the PMO is displayed afterwards (Reilng, 2015).

The idea of PMO was determined in the studies of Cleand and Kerzner (1985), as well as Frame and Block (1994). One point of view is that PMO refers to a team of individuals who are authorized to work in a specific project (Cleand and Kerzner, 1985). Whereas, the other aspect was that PMO is a unit that utilizes the available resources necessary for the best function of Project Management (Murphy, 1997). PMO, as it is defined by Dai and Wells (2004), is an organizational unit that ensures to project managers, project teams and functional managers access to principles, practices, methodologies, tools and techniques that are used for PM, in order to achieve project performance. On the other hand, Hoobs and Aubry (2008) claim that the operation of this unit should be determined by its position in the organizational structure and by the

tasks it is responsible for. The authors also believe that the most important thing is the value that a PMO creates for the organization.

The Project Management Institute (PMI) describes the PMO as an organizational department with different functions, whose main operation is to manage projects in the company. Additionally, studies from the PMI refer to the role of the PMO as the rendering of support, through methodologies and knowledge acquired from previous projects, to achieve successful management of the projects implemented in the company (PMI, 2008).

Characteristics of the project management office

The PMO can differ on the size, the functions and the services that it provides. In order to see whether a PMO would be applicable in a company the following services give the answer to what a PMO can provide. It may provide a well-trained project manager to run the important projects. Also the PMO provides PM consulting, develops documents and maintains practices for later use. Moreover the PMO is in charge for the PM team training and performs reviews ensuring that new projects are applying all tools and methods (Whitten, 2000).

The use of a PMO can be a great benefit for an organization. The tools and techniques can be predicted and repeated or even standardized. Thus they can be better utilized and consequently improve the organizations performance. Also a PMO can affect positively the project team, by choosing more productive and skillful employees and by growing staff professionalism in project management (Block and Frame, 1998; Whitten, 2000).

Some of the characteristics that are proposed to help develop organizations Project Management effectiveness are the followings (Block and Frame, 1998):

- Support group for projects, so that project managers are free from reporting and officialism.
- Consulting and mentoring from professional Project Management experts to assist planning the project.

- Training to reinforce the PM group's skills in order to have the same understanding level.

- Providing support to projects through technology, such as virtual project offices across geographical and organizational distance.

Another use of project management offices might be designing the project risk plan and the evaluation of the project as it progresses.

Features and functions of the project management office

Another part that has puzzled researchers, concerning the accurate definition of PMOs, is what kind of functions are performed by the PMOs. Rad and Levin (2002) have recognized two categories, the project-oriented and the organization-oriented functions. However, the main functions performed by PMO are described by Letavec (2006) as consulting support, knowledge management and standardizing. More analytically Hill (2008) describes five groups of PMO functions. The first is the better management of practices. The second group refers to the entire structure provided by the PMO. Subsequently, the third function group is the accurate integration of all available resources. The fourth is the methodological support, denoting the assistance in planning the project, conducting reviews and organizing a rescue plan for the project, in case of emergency. The last group, the fifth function, provides support for the parent organization's growth.

Additionally, although typical characteristics of the presence of PMOs are not known, the literature helped to see some other differentiations of PMOs, based on some characteristics and categories other researchers have found (Dai and Wells , 2004). Firstly the PMO can contribute in *developing and sustaining a set of standards and methods*, becoming a guide for PM functions within the company. In order to only provide guidance and not to interfere in the uniqueness of each project, the methods and standards should be complete but not highly detailed. The proposal development, documentation standards and risk assessments are some areas reflecting the above feature of the PMO.

Secondly the PMO can be used in order to create *libraries of knowledge for PM*, recording data from past projects. This data might be either a database lesson learned from previous projects, or status reports, changes to the initial plan of the projects, risk management plans and information from successful or not projects. All these as historical archives can be indicative and help to increase project performance.

Further up, the PMO can provide *administrative support*. That can be achieved by undertaking the administrative work needed, so as not to distract the project team, by being correctly reflected in the project deliverables. Some demonstrative work areas in this category might be the support with PM software, the web-site management or the classical reporting procedure.

Another category of the PMO is participating in the *human resources management*. It is important for the project team to be consisted of capable people and it is more important for the project manager to have the skills required to manage the project team and to deliver a successful project. The Project Management Office can choose the suitable project manager and assist with the management of the project team.

Consulting and mentoring are also services a PMO can offer. Nowadays the constantly increasing use of PM has urged organizations to search more strategic PM approaches. The PMO can assist by providing consulting and mentoring in PM methodologies and in actions that should be done in order to accomplish project success.

Last but not least, the PMO can be responsible for *training employees in PM*, by cultivating their personal skills and technological skills through Project Management software training.

Models of project management office functioning

Dai and Wells (2004) present another approach to the functions implemented by PMO. Their focus is on the use of a PMO and the need to create value for the parent company, and especially tangible benefits. Some other studies focus also on the value of a PMO in an organization (Aubry; Hobbs; Thuillier, 2007). This is interesting, since it

highlights the strong contribution of the PMO in the organization, so as to achieve the strategic objectives and more generally the business development.

Other researchers suggest that the value that is added to the company through PMO includes the functions of preparing the appropriate organizational environment, developing managers and project teams, collecting data, reporting and utilizing the available knowledge and resources (Pellegrinelli; Garagna, 2009). More analytically, the literature contains the functions that should be implemented by the PMO, leading to the general creation of the following three models of functioning of the PMO (Arrto; Kulvik; Poskela; Turkulainen, 2011).

The first model is the one that provides direct support for a specific project implemented in the organization. Thus, this type of PMO is developing the appropriate methods, techniques, standards for this specific goal, to support efficiently the project implementation. Further up, the second model is the one, where the PMO is functioning as a mean of transferring knowledge (Skrzypek; Hofman, 2007). The operations of this PMO functioning model are basically consulting, educational and training activities. The knowledge and data are gained from previous experiences, past projects, practices, methodologies and data that either have been successful and helpful or not. The last model, the third one, is the organizational PMO. In this kind of PMO the most important goal is to provide support for the business development of the company, rather than methodology and tools (Kendall; Rollins, 2003). Concluding, there is also another classification on the PMO functioning concerning the range of the support implemented on the parent company (for example one, several or many projects, programs and portfolios). There seems to be a strong relationship on the position the PMO has in the organizational structure and the PMO functioning model (Spalek, 2012).

Project management office as knowledge broker

Recently research into PMOs has presented PMOs from a different approach, as knowledge brokers between projects and between project and top management.

The PMO is a formal layer of control between the top management and project management within the PBO. The roles of PMO's function differ according to the context within which they are integrated. This has resulted to the creation of many different explanations of what a PMO is and does. Some PMO only adopt already existing models without adjusting them to their organizational special needs (Aubry et al, 2010), while other are as knowledge-brokers transmitting knowledge and resources between PBO and its projects (Desouza and Evaristo, 2006; Julian, 2008).

There have been studies about this specific role of PMO, as knowledge brokers. Following, it is going to be analyzed this role of PMO, the challenges in PBOs and the role of PMO as a potential knowledge broker (Pemsel;Wiewiora,2012).

The PBO mainly learns from the projects through the experiences, practices and methodologies, which project participants and project members have used (Swan et al ,2010). This occurs mostly at the end of the projects, since then the project lessons and practices are evaluated. The "Knowledge Sharing" process happens between project stakeholders and various information channels, such as project documents (Arenius et al, 2003). However, the "Knowledge Sharing" process has to come up against some obstacles. Projects act like a separate organization being highly independent, hence it is difficult to coordinate the project procedures and the learning process. This results learning and "Knowledge Sharing" problematic (Hobday, 2000). Also, the transfer of project lessons is fragmented, because lessons are focused on product knowledge, what was achieved by the project team, rather than the process knowledge, how it was achieved and if it was successful (Newell et al, 2006).

The PMO, within a PBO, can act as a channel to transmit the knowledge obtained to the organizational levels. Therefore, a PMO can act as a knowledge broker. Knowledge brokers contribute to the "Knowledge Sharing" process by providing and incorporating all the perspectives, making them understandable to all components. The PMO that acts as a knowledge broker manages the best practices of project management and contributes to the better utilization of project management in the company (Brown and Duguid, 1998).

An exploration of project management office features and their relationship to project performance.

A research was conducted by Dai and Wells (2004) to see the relationship between the presence of a PMO and the project outcome. The methodology that was used analyzed 234 organizations 113 of them had a PMO that was established between mid-1990 and 2000. The research was about the project performance and the PMO's functions and services variables (Standards and Methods, Historical Archive, Administration Support, Training, Consulting and Mentoring etc.). The result from the companies that had a PMO was compared to the ones that did not or had something in-between.

The results revealed that gradually more organizations are including a PMO in their organizational chart inspiring management reliance. Project management standards and methods display a strong correlation to project performance. Also project historical archives seem to play an important role to project performance. Additionally innovators in PMO establishment provide information regarding the policies and documents to assist the creation of new PMO. Finally the research revealed some data that should be examined further. These are that the PMOs have been adopted more rapidly in the new-technology companies and that PMOs might influence different the project performance in the first years of their use, than later.

Three roles of project portfolio management office

Another challenge that organizations have to deal with nowadays, is the management of multiple sets of projects (Arrto and Dietrich, 2004; Dietrich and Lehtonen, 2005). This has come up due to the goal to achieve the strategic objectives a company has. Research during the last years has shown that multi-project issues have become critical for organizations. This led to the need to create a unit that will be responsible to manage the multi-projects. This unit is a Project Portfolio Management Office (PPMO). PPMOs are a separated part of PMO in charge to handle portfolios, the multiple single projects and programs. Multi-project PMOs have appeared within the multi-project management environments as a main tool to manage and coordinate multi projects and single projects so as to achieve project performance. It is concidered by

authors (Hobbs and Aubry, 2007) that PMOs should be differentiated based on their focus such as project portfolios. So it is considered that PPMOs are multi-project PMOs exclusively responsible for project portfolio management.

The designation of the PPMO comes from the tasks that it will undertake. These tasks derive from the organizational needs and define the type of the PPMO. Each organization has specific requirements that should be met and this causes the development of a multi-project PMO. This multi-project PMO defines the appropriate tasks that have to be undertaken from the PPMO in order to implement the objectives and specify actions that should be done (Burton et al, 2011; Mackenzie, 1986).

Many researchers propose multi-project PMO to be like project portfolio manager as a central management unit that underpins senior management by coordinating all functions and providing its special knowledge for project portfolio management (Jonas, 2010).

The roles of the PPMOs are determined by the activities the PPMOs have and by the level of the involvement concerning the Project Portfolio Management. The allocated operations and the actual contribution of PPMOs' define their structure and roles (Unger; Gemunden; Aubry, 2012). Formal role statements raise expectations that PPMOs cannot accomplish, since they lack power and resources. The activity patterns, that are the required tasks, create a role which explains the responsibilities of PPMO when managing project portfolios. The roles in the governance of project management and PMO have been a research subject the last years. In a PPM context there are recognized two activity patterns that reflect the expectations of a PMO to deal with multi-projects and offer value through coordination and control management (Pellegrinelli and Garagna, 2009). Firstly, the existence of PPM is necessary so that detail planning is completed and the implementation is achieved through correct information flow. In that case the PPM assists the coordination between multiple projects in portfolios in order to achieve the desired goals. The PPMO is completely responsible to conduct the directing activities as indicated by the owner of the project portfolio. Secondly, the lack of necessary and related information for decision making in project portfolio creates the need for a PPMO that will assist control management. That PPMO will provide

to the entire portfolio reliably and constantly the appropriate information. In addition, PPMOs can contribute through activities that support the project portfolio managing. This support might be either in terms of training and motivating or in terms of helping the decision making process and providing after sales support to customers. To conclude, the roles and actions of a PPMO depend on the requirements of the superiors, the company and the stakeholders.

When PPMOs have the role of the project portfolio managers, they have to handle the challenges of portfolio management, which are different depending on the project portfolio, and perform managerial tasks in the PPM (Jonas, 2010). The PPM has many tasks that have to be done. It is responsible to assign all resources, it accepts projects into the portfolio observing the progress of single project and coordinating all projects in portfolio to achieve stability and success. There have been recognized four successive stages of the managerial tasks a PPM have to deal with (Jonas, 2010). First is the portfolio structuring, incorporating all steps of planning a portfolio based on the company's strategy, such as proposal evaluations and project selection. Second is the resource management, it is the appropriate distribution of all resources in order to manage all projects at the same time. Third phase is the portfolio steering, which is the uninterrupted coordination of the portfolio. Final is the organizational learning and portfolio operation, including post-project reviews and lessons learned.

To measure the value of the PPMOs roles it is essential to see the impact they have on the portfolios management performance. The performance is seen through two parts, PPM quality and the success of portfolios. The quality can be divided in three subcategories (Dammer and Gemunden, 2007; Jonas et al 2010). The one is the information quality regarding the information accessibility, content and transparency. The second is the resource allocation quality, regarding the correct well-timed and properly distribution of resources in order to reach objectives. The third is the cooperation quality, which shows the ability to assist other project managers and other project teams. These quality parts show the accomplishment of the portfolio management tasks' processes. This measurement of performance is actual and immediate, so the PPM quality automatically means the performance of the portfolio. So if the PPMOs' roles impact on quality, they consequently can be considered important for the project

portfolio success. The second measure, success of the PPM is reflected on the portfolio success of two management levels, single projects and project portfolios. PPMOs' roles may impact on single project management, and consequently their success (Jonas, 2010; Maskendahl, 2010).

There are three roles of PPMO that can affect the quality that is already analyzed above, the coordinating role, the controlling role and the supporting role (Dinsmore, 1999; Kendall and Rollins, 2003). The coordinating role is in charge of resource allocation, having a positive impact in resource allocation quality in the PPM context. The controlling role is linked directly to the information quality managing all available information. The supporting role is affecting the information quality and cooperation quality by transferring knowledge and applying the project management standards in single projects within the PPM.

Summarizing, the three roles of the PPMO can indicate how the PPMO can contribute into PPM performance. PPMO assists to achieve the organization's objectives, by preventing responsibilities overlapping within the PPM. Also, functioning under precise directions the PPMO can contribute to a more effective PPM.

Project management in the Greek context

After analyzing the PM concept, it is essential to investigate whether it exists within the Greek business context or not. PM is considered either as a special skill either as a job. However nobody can question the fact that it is a basic element of the every-day life of the organizations. PM can be responsible for the business success, especially when all parts are functioning as planned, and the resources are correctly utilized. On the other hand, PM can also be the business destruction when the plan is not followed, the time schedule is not respected or the project objective is not specific and understandable for all project team members. Unfortunately in Greece the PM concept is not so widespread. Specifically, in the Public sector, which constitutes the 65% of the GDP, it is completely unknown. The Greek Standards Organization (n. 1429) concerning the PM maturity within the organizations was not applied and is no longer required, so it is repealed. Finally, in the private sector, PM is appreciated in a higher degree but can be significantly improved. Despite of that, in an educational level there are many Project Management Professionals in Greece. They are getting their certification either through universities or through PM seminars. The problem is that although the resources (Project Managers) exist, the majority of organizations in Greece have not adopted the PM principles yet, due to the lack of PM corporate culture. Consequently, PM is not taken seriously into consideration and is treated as an expense and not as a profit (PMI Greece,2010).

The main reason, why organizations are interested in PM in Greece is the large number of projects' failure. Almost all companies have to deal with projects. These projects should be planned accordingly and implemented successfully in order to achieve the companies' goals. However, the lack of PM within the companies does not allow them to determine specific budget, time schedule and clear objective. All these lead to the projects failure. This urges companies in Greece to become interested in PM.

The type of PM that exists in Greece mostly is the individual Project Managers. These Project Managers undertake many projects from various fields and are mostly

responsible for the planning and less for the implementation. Less common is the Project Manager in the company, functioning in a specific level reporting either to senior managers, or to junior managers. The establishing of PMO in Greek organizations is generally rare and more commonly seen in organizations concerning the ITC industry (PMI Greece,2013). That has occurred, because these companies mainly work by undertaking projects of web-site creation or programming software. All these cannot be similar and are considered as completely different projects. However, the industry that uses mostly the PM principles in Greece regardless if they have established a PMO or have hired a Project Manager is the Construction Industry. That followed the need for precise planning of the phases of a construction project. Thus, the specific time schedule, the budget, the resources, human and material, had all to be defined. Only PM could offer all this.

Even though PM is not so widespread in Greece, it should be applied in many organizations. The advantages of using PM are many and can assist organizations be successful, particularly through the economic crisis that Greece is experiencing.

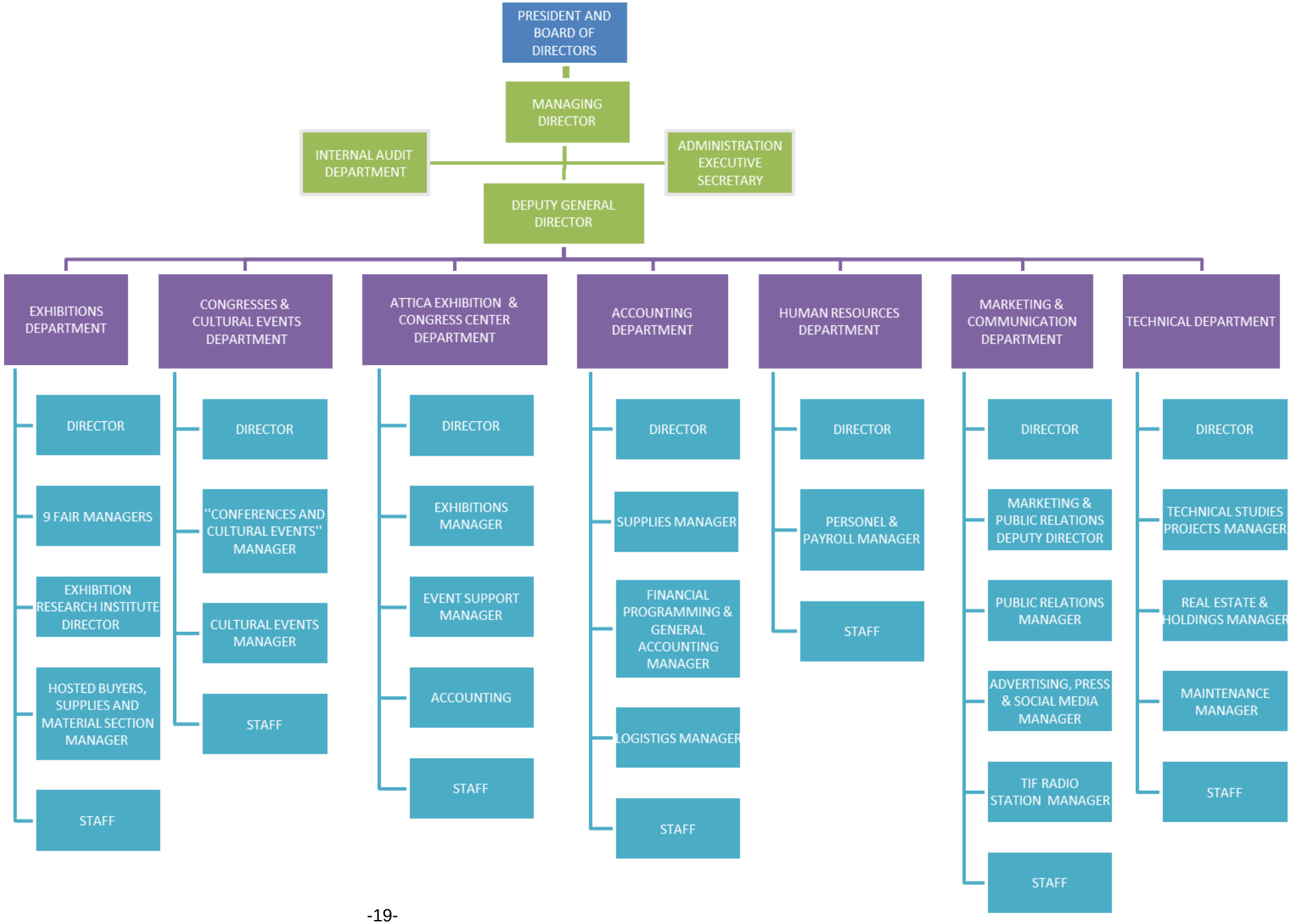
The Proposal of this dissertation is to establish a PMO in a Greek company and if possible to also apply PPM or create a PPMO depending on the forthcoming projects. The innovation in this proposal is that the company mainly offers services, it is a very old company and has not yet completely evolved its managerial structure. In order to examine the idea of creating a PMO and introducing the PM concept in the company it is essential to analyze first the structure of the company and the services it can offer, as well as the projects that has and the PM might be needed.

Case study: TIF-HELEXPO SA

The company that is herein analyzed is TIF-HELEPXO SA and is the National Institution, the larger organizer of exhibitions, congresses and cultural events. The company organizes the exhibitions, congresses and cultural events for its own benefit as well as for other companies accommodated in its own facilities in Thessaloniki, Athens and Kommotini. It is important to examine exactly the scope of the company to see how PM can be applied.

Firstly, the objective of the company is to organize the Thessaloniki International Fair which is its main exhibition and is organized every year for the last 80 years. Additively, concerning the exhibitions the company is also establishing at least 15 more exhibitions with different subject, targeting to various industries. The duration of the exhibitions is approximately a week and the goal is to connect businesses, entrepreneurs, vendors and buyers from all Greece, northern Europe and whoever interested from all over the world. Secondly, the congresses are arranged on behalf of educational institutions, medical and pharmaceutical societies. Third, the cultural events that are organized are mostly theme parks, for example they built a Chocolate Museum and created a Christmas theme park for 2 years. These cultural events have as a goal to connect people through art, through music events, painting exhibitions and other events reinforcing the cultural heritage. Besides all that, the plant that TIF-HELEXPO SA has in Thessaloniki is a large area and is constantly rented for several uses. Some of these uses are for the operation of coffeehouses, some for sports competition, like fencing races that don’t need a specific court, and finally for facilitating the municipality of Thessaloniki by allocating a building for a police department.

The organizational chart of the company is as follows:


PRESIDENT AND BOARD OF DIRECTORS
MANAGING DIRECTOR
INTERNAL AUDIT DEPARTMENT
ADMINISTRATION EXECUTIVE SECRETARY
DEPUTY GENERAL DIRECTOR
EXHIBITIONS DEPARTMENT
DIRECTOR
9 FAIR MANAGERS
EXHIBITION RESEARCH INSTITUTE DIRECTOR
HOSTED BUYERS, SUPPLIES AND MATERIAL SECTION MANAGER
STAFF
CONGRESSES & CULTURAL EVENTS DEPARTMENT
DIRECTOR
"CONFERENCES AND CULTURAL EVENTS" MANAGER
CULTURAL EVENTS MANAGER
STAFF
ATTICA EXHIBITION & CONGRESS CENTER DEPARTMENT
DIRECTOR
EXHIBITIONS MANAGER
EVENT SUPPORT MANAGER
ACCOUNTING
STAFF
ACCOUNTING DEPARTMENT
DIRECTOR
SUPPLIES MANAGER
FINANCIAL PROGRAMMING & GENERAL ACCOUNTING MANAGER
LOGISTIGS MANAGER
STAFF
HUMAN RESOURCES DEPARTMENT
DIRECTOR
PERSONEL & PAYROLL MANAGER
STAFF
MARKETING & COMMUNICATION DEPARTMENT
DIRECTOR
MARKETING & PUBLIC RELATIONS DEPUTY DIRECTOR
PUBLIC RELATIONS MANAGER
ADVERTISING, PRESS & SOCIAL MEDIA MANAGER
TIF RADIO STATION MANAGER
STAFF
TECHNICAL DEPARTMENT
DIRECTOR
TECHNICAL STUDIES PROJECTS MANAGER
REAL ESTATE & HOLDINGS MANAGER
MAINTENANCE MANAGER
STAFF

Starting analyzing the structure of the company and the specific operations that are conducted in every department, it is shown that the President and the Board of Director are in the top management level. They are responsible to make all important for the company decisions, regarding all departments and operations of the company. The President and the Board of Directors do not get involved in company's functions. They are informed about all happenings in the company and take action only when they have to decide about significant issues, or have to solve difficult problems.

Continuing, the Managing Director, having as assistant the administration executive secretary, is cooperating with the Deputy General Director for all operations in all the departments. The internal auditor is secondary help to reassure all are working correctly according to the economic situation of the company. The Managing Director and the Deputy General Director, besides being responsible for all departments, they have also the liability to process and perform all innovations regarding the company's functions. These innovations are either their creation or an idea of an employee and they have to organize the way it will become reality, check the budget, define the time schedule and make the objective understandable for all involved in the project. The innovations that are proposed in the present work refers either to a new exhibition, with a different topic from previous ones, or a theme park. All these can be treated like separate projects and PM would help decide whether a project is valuable for the company and, if it is valuable, how it will be carried out successful so as lead to project performance.

Subsequently, each department's operations are analyzed individually. In the Exhibitions department, which is the biggest regarding the employees, the subject is to plan and organize all Exhibitions. This means that the employees have to contact potential exhibitors in order to see who are interested so as to arrange the plant for the exhibition. Afterwards the Marketing Department has to conduct the appropriate public relations in order to attract visitors and especially trade visitors. The Technical department is responsible for all building facilities to be appropriately set up and maintained in order to fulfill all regulations. Finally the Human Resources department is giving the orders depending on the employees that are needed for the specific exhibition.

The Exhibitions could be considered as projects and all the plans that are done by the already existing departments could be done in PM and then just implemented. This would also help to count the budget and see if such a planning with PM assists the company's performance.

The Congresses & Cultural Events department has to do all necessary connections with professionals that will either want to organize a congress or will participate to the cultural event. For instance, if a music event is going to take place, then the performers that are going to perform have to be informed, the program has to be set up and all technical requirements have to be arranged. The technical requirements are the supply and installation of the stage and all lighting and sound equipment.

The Marketing and Communication department is responsible for the marketing plan of the company. They employees are in charge for the promotion of events, exhibitions and congresses. Also the Marketing department organizes a press conference before each event inviting the most important personalities in the Greek society, like the prime minister, ministers and people from various industries and societies (scientific etc.). The marketing plan usually encloses the printing and distribution of flyers, the advertising in media TV, radio, internet and the hanging of posters in cities. All these could be planned with PM so as to program the time schedule, estimate the cost and the human resources needed.

The Technical department has the subject to set up the place for the events. This includes the construction and formation of the internal and external spaces, the establishment of stands or stages when needed and the regularization of lighting and sound systems. Despite of that the technical department is in charge of the company's plant maintenance all year. This involves all conservations in the buildings either there are destructions or not, the licensing of firebreak studies, also electrical and hydraulic control. All these can be considered as projects in a PM context.

The Accounting department is in charge for all financial transactions and payments with buyers and suppliers. The Human Resources department is responsible for all employee issues, their training and ensuring that all employees are satisfied with their working environment. Finally the Attica Exhibition & Congresses Center Depart-

ment works supplementary to the main company in Thessaloniki operating the same functions in a smaller scale.

Proposal

The purpose of this dissertation is to establish in a theoretical base a PM department in the specific company that have been already analyzed. This would be a department like all others within the company and will be in charge of all possible projects. Therefore it would probably work also like a PMO. The functions that are going to be completed in this department are all functions included in PM. The three basic PM functions are the Project definition, the Project planning and the Project control. The term Project definition refers to the determination of the purpose, goals and constraints of the project. Also in this function the Project Manager should establish the basic controls, which employees will be involved in the project and what their role would be. Project planning is the stage of estimating and scheduling the techniques that will be used to the project. This includes details on the employees, the allocation of responsibilities, the cost and the risk management planning, where the most uncertain areas are identified and correction strategies are prepared. Third, the Project control is the function is the activities that evaluate the project's performance as it progresses identifying early problems, providing feedback and communicate the project progress and changes to the project team and stakeholders.

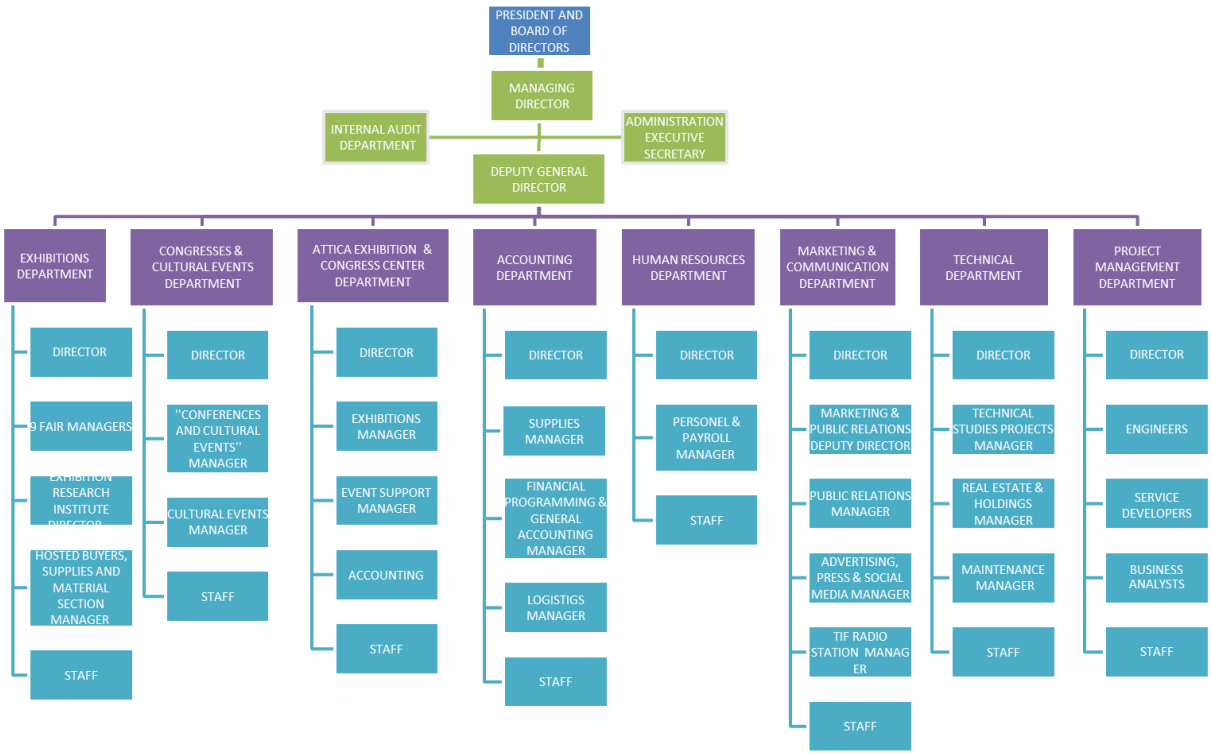
Furthermore, the PM department will handle projects through the five groups of PM. These are *Initiating*, by recognizing and starting the project, *Planning*, by establishing the scope and defining objectives of the project, *Executing*, which is the implementation of the PM plan and finally closing, which is the formal termination of the project. All these are going to be theoretically applied later.

The structure of the PM department will be as any other department. There will be the Project Manager and employees forming the project management team. This department is proposed not to be temporary but permanent, thus it will eventually function like a PMO. The PM department will be responsible to do the planning of all projects that are arising within all other departments of the company, as analyzed previously. Subsequently, the plan will be given to the Director of the appropriate de-

partment. For the execution of the project, responsible will be the Director of the department, while the Project Manager will supervise the whole procedure evaluating the project performance. The PM department will function as a PMO, while it will also offer the PMO's characteristics. The PM department will undertake all possible Projects, so the experience will allow it to offer support for projects. Also it will offer consulting and mentoring within other departments, while the employees in the PM department will become PM professionals. Training will be provided to all employees working in the Project, targeting to reach the same understanding level. Finally it will support and supervise the implementation of the project plan. All these functions that the PM department will offer can give to it the characterization of PMO.

Indicative the following matrix organization is proposed.

Matrix organization



Practical application: integrated energy design of the pavilions of TIF-HELEXPO SA in Thessaloniki

Description of the project

The company has in its possession buildings. The basic plant in Thessaloniki is consisted of 17 pavilions that are used for all exhibitions and events. The main project that has occurred in the technical department is the obligation to convert all these facilities to zero energy consumption facilities. This has derived up because of the international energy regulations. So the specific project is the perfect project to put in application the new PM department. Moreover, it is interesting, because besides the PM functions the functions of PPM are also incorporated in the specific project. That is because the PM plan will be structured for the one pavilion and will be implemented to all 17 simultaneously.

The integrated energy design will be based in three main axes. The first is the renovation of the pavilions in order to reduce energy demand. This can be achieved by changing the windows and doors frames, to succeed air tightness, or by reinforcing the thermal insulation to decrease energy losses. The second axis includes the use of renewable energy. This could be accomplished by instating solar panels in all pavilions' rooftops to obtain a large proportion of the energy needed. The third axis is the use of the least polluting fossil fuels in the most efficient way, if it is still the need for some auxiliary energy. The whole integrated energy design process could be summarily described in the following steps (IED, 2009):

1. Create a multi-disciplinary design team from the first day with the appropriate knowledge in energy/environmental issues and who are motivated for close cooperation. This team could be consisted of employees that are already working in the Technical department, without having the concern to hire more human resources

2. Examine the boundary conditions of the project and formulate a set of specific goals for the project based on the needs and demands. These boundary conditions are referring to the integration into urban environment, the already existing con-

struction and the surrounding environment (traffic, noise, air quality) and the availability of natural resources in the area.

3. Make Quality Control Plan to follow-ups throughout the project and reassure that all team members have a common understanding of the design task - the integrated energy design plan.

4. Enable close cooperation between the architect, engineers and relevant experts through the establishment of a specific place to work, in order to assist the collaboration.

5. Update the Quality Control Plan and document the energy performance at critical points (milestones) during the design.

6. Motivate and educate construction workers and apply appropriate quality tests. This could be provided either through the PPMO or the Technical department

7. Make a user manual for operation and maintenance of the building for later use.

In order to complete successfully the project management plan, there should be analyzed all project management areas. Firstly the project integration management which includes the processes and activities needed to identify and coordinate the various processes and project management activities. Following, the project scope management includes the processes necessary to ensure that the project includes all the work required, to complete the project successfully. Also the project time management and the project cost management assists to manage correctly time and do the budget estimation. Additionally, the project quality management, determining the quality, as well as the project communications management, transferring the necessary information, are essential for the desired outcome of the project. Project human resource management and project risk management are likewise important to be a part of the whole project plan.

Description of the project team

The project team will be consisted of employees from two departments. The one is the PM department and the other the Technical department. Since the PM department will be in charge of planning projects from various departments, the PM team will be comprised by employees that will permanently work in the PM department and by employees that belong to the department that has to do the project. The PM employees will be responsible for all procedures, including planning, training, monitoring and evaluating the progress of the project, whereas the employees from for the various departments will be in charge for the implementation. In the specific projects the project team will be composed by:

One senior project manager, who will be the director of the PM department, and will be responsible for all projects. The project manager will be the connecting link transferring the progress of the project, the problems and the project performance evaluation results to the superiors. The superiors are the deputy general manager, the managing director and the President and Board of Directors. Additionally the project manager will coordinate all inferior employees transferring what the superiors propose making sure are employees involved in the project clearly understand the goals and objective. The background and studies of the senior project manager would conveniently be in Management with in deep knowledge of PM.

Also three engineers will be necessary in order to design in detail the procedures that are going to be followed to accomplish the integrated energy design. The engineers would ideally be a Civil engineer, an Architectural engineer and a Mechanical engineer. These three specializations will fully cover all aspects of the processes of the renovation. The engineers will also define the exact number of constructors that will work in the project, the hours they have to work as well as their payment.

One senior services developer will also be a part of the project team. He could have a background in business IT. The knowledge in IT will be required, because many different programs with different software are going to be used in order to estimate all necessary actions and materials for the completion of the integrated energy design.

Two junior managers with full knowledge of the structure of the pavilions to provide necessary details will also be required in order to plan and further execute the project. These details might be on the materials that already exist in the pavilions or details regarding the dimensions of the pavilions and their orientation, so as to see the sun accessibility. Also they will provide information concerning the energy demand in exhibitions, events or congresses, the number of visitors dependent on the event and the season, associating it to the weather conditions. Finally they should have construction experience to also aid the realization of the project.

Finally two business analysts with background in business administration will also be needed, as well as an employee providing secretarial services. The business analysts will be in charge to complete the PM areas planning, relating to cost analysis, HR, risk analysis and resources needed. The secretary would assist with appointments, and officiate like a call center.

Risk management plan

The risk management plan is an essential tool to prevent problems or to have an alternative plan in case a problem occurs. This plan is used in case of emergency in order to prevent the progress of the project delay. The potential deficiencies in the project might be that the plan is not given consent by the responsible executives or that the plan might not be approved after the first round of feedback. Also the resources, equipment and materials availability or the inaccurate costs estimates and forecasts could create an awkward situation regarding the project. And last but not least the lacks of critical tools, such as change management system, add the possibility to use the risk management plan. Besides that, the Human factor can also affect the risk management plan. Inaccurate expectations from shareholders side, requirement misunderstanding of the project team, low team motivation can be some factors in the risk management plan.

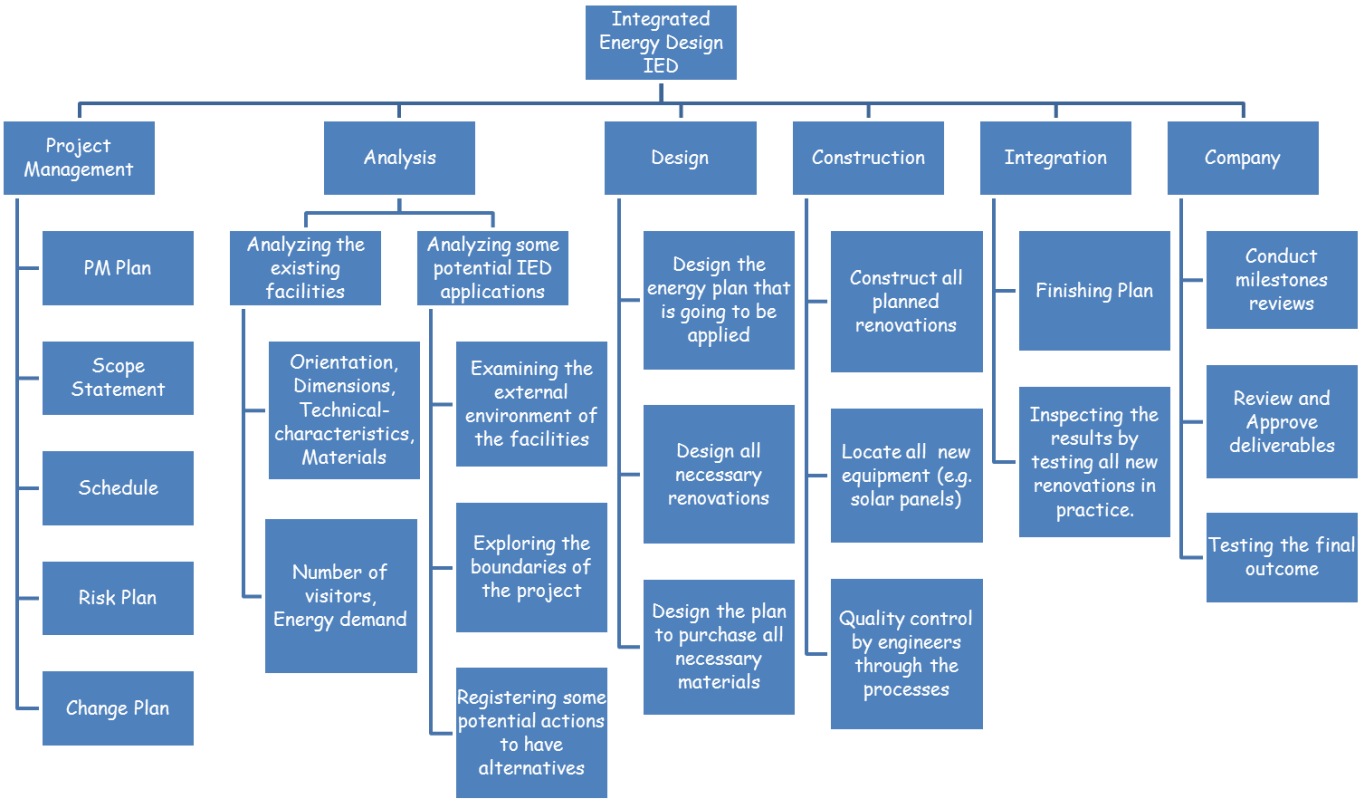
List of deliverables and milestones-Work Breakdown Structure (WBS)

The WBS is an important tool of PM constituting the basis for project planning and control. It is the linking point for work and cost estimates, information, responsi-

bility and actual work effort/cost expenditure (Colenso, 2000). Creating the WBS the project is subdivided to project deliverables and the project work is analyzed into smaller components, easier to handle. Each descending level embodies progressively detailed definition of the project work, offering a more analyzed illustration of what has to be delivered. The WBS displays the project scope, assists the integration of schedule and cost performance and simplifies the allocations of resources and the analysis of progress and status data (Verzuh, 2000).

In the project that is analyzed in this particular dissertation, *the integrated energy design of the pavilions of TIF-HELEXPO SA in Thessaloniki*, the WBS is created as shown in the graph bellow. The first level is the full scope of the project, it includes all direct and indirect work, namely the project. The second level is consisted of the major areas, which are the Project Management, the Analysis, the Design, the Construction, the Integration and the final project delivery to the Company. The third level is a detailed analysis of the major areas from level two. In more detail the third level includes all basic PM parts in order to succeed the first major area of the second level, Project Management. These parts are PM plan, the scope statement, the scheduling, and the change plan, all significant for the planning and completion of a project. The Analysis is consisted of all these actions necessary to provide detailed information for the existing facilities regarding their structure and their use (number of visitors, energy demands), as well as the analysis of the external environment of the facilities to see the margin to changes. The Design and Construction are decomposed to all appropriate subprojects in order to design the energy plan that is going to be applied and the construction works that have to be done to achieve the integration of the project. As a final point, the Integration and the Company refer to the consummation of the project, by finishing all subprojects that are in abeyance, testing the final outcome and delivering the project to the Company conducting milestones reviews.

List of deliverables and milestones – WBS



Communication Plan Matrix

It is important for the project, in order to be successful and achieve project performance, to distribute the necessary information in an appropriate layout and in the required time periods to the appropriate components of the project. The Communication Matrix identifies a role for each components and specifies what kind of information, with which medium and the frequency of the information distribution for each role. The project will use both formal and informal methods for distributing information as appropriate.

Communication Plan Matrix

COMPANY	WHAT INFORMATION DO THEY NEED?	FREQUENCY	MEDIUM	RESPONCE
DIRECTOR-SUPERIOR PROJECT MANAGER	COST, SCHEDULE , PERFORMANCE, PROBLEMS	WEEKLY	MEETING AND WRITEN REPORT	REQUIRED IN 3 DAYS
3 ENGINEERS	COST, SCHEDULE, PROBLEMS, PROPOSED ACTIONS, DESIGN	WEEKLY	WRITTEN REPORT	REQUIRED IN 5 DAYS
1 SENIOR SERVICES DEVELOPER	SCHEDULE, ACTIONS, HOW THE PROJECT PROGRESSES	EVERY TWO WEEKS	REPORT	
2 JUNIOR MANAGERS	SCHEDULE,INFORMATION, DESIGN, SCOPE	EVERY THREE WEEKS	REPORT	
2 BUSINESS ANALYSTS	COST, QUALITY PERFORMANCE, REQUIRED ACTIONS, TESTING FEEDBACK	WEEKLY	MEETING	REQUIRED IN 5 DAYS
SECRETARY	SCHEDULE, ACTIONS	WEEKLY	REPORT	

Responsibility Matrix

The Responsibility Matrix clarifies the role of each project stakeholder and its use is crucial for the allocation of responsibilities to subprojects.

Responsibility Matrix

ACTIVITY	DIRECTOR-SUPERIOR PROJECT MANAGER	3 ENGINEERS	1 SENIOR SERVICES DEVELOPER	2 JUNIOR MAN-AGERS	2 BUSINESS ANALYSTS	SECRETARY
PROJECT MANAGEMENT						
PM PLAN	**R/E**	**R/E**	**C**	**C**	**C**	**I**
SCOPE STATEMENT	**R/E**	**C**	**I**	**C**	**C**	**I**
SCHEDULE	**R/E**	**R/E**	**I**	**A**	**I**	**I**
RISK PLAN	**R/E**	**C**	**I**	**C**	**R/E**	**I**
CHANGE PLAN	**R/E**	**A**	**I**	**R/E**	**C**	**I**
ANALYSIS						
ANALYZ. THE EXISTING FACILITIES	**A**	**I**	**I**	**R/E**	**I**	**I**
ORIENTATION, DIM. TECHN. CHARACTERISTICS, MA-TERIALS	**A**	**I**	**I**	**R/E**	**I**	**I**
NUM. VISITORS, ENERGY DEMAND	**A**	**I**	**I**	**R/E**	**I**	**I**
ANALYZ. SOME POTENTIAL IED APPLICATIONS	**A**	**R/E**	**I**	**C**	**I**	**I**
EXAMINING THE EXTERNAL ENVIRONMENT OF THE FACILITIES	**A**	**R/E**	**I**	**C**	**I**	**I**
EXPLORING THE BOUNADRIES OF THE PROJECT	**A**	**R/E**	**I**	**C**	**I**	**I**
REGISTERING SOME POTENTIAL ACTIONS TO HAVE ALTERNATIVES	**A**	**R/E**	**I**	**C**	**I**	**I**
DESIGN						

DESIGN THE ENERGY PLAN	**A**	**R/E**	**R/E**	**C**	**I**	**I**
DESIGN ALL NECESSARY RENOVATIONS	**A**	**R/E**	**R/E**	**R/E**	**C**	**I**
DESIGN THE PLAN TO PURCHASE ALL NECESSARY MATERIALS	**C**	**A**	**I**	**R/E**	**I**	**I**
CONSTRUCTION						
CONSTRUCT ALL PLANNED RENOVATIONS	**A**	**R/E**	**I**	**R/E**	**I**	**I**
LOCATE ALL NEW EQUIPMENT (SOLAR PANELS)	**A**	**A**	**I**	**R/E**	**I**	**I**
QUALITY CONTROL BY ENGINEERS THROUGH THE PROCESSES	**A**	**R/E**	**I**	**I**	**I**	**I**
INTEGRATION						
FINISHING PLAN	**R/E**	**C**	**C**	**C**	**C**	**I**
INSPECTING THE REULTS BY TESTING ALL NEW RENOVATIONS IN PRACTICE	**A**	**R/E**	**C**	**C**	**R/E**	**I**
COMPANY						
CONDUCT MILESTONES REVIEWS	**A**	**C**	**I**	**C**	**R/E**	**I**
TESTING THE FINAL OUTCOME	**A**	**R/E**	**I**	**I**	**R/E**	**I**

R/E: responsible for execution, A: approval, C: must be consulted, I: must be informed

Results

After completing the PM plan it is interesting to analyze the results. Firstly, to be mentioned, the software that was used is the *OpenProj* and the analysis was conducted in a theoretical basis. Consequently, the resources that have been used for the cost estimation are only the employees that constitute the project team. In reality, the resources would be much more, considering the human resources that are going to be needed in the construction part and taking into account all the materials and equipment that will be used.

The duration of the whole project, from the planning till the final project delivery to the company is estimated to be 350 days with a typical weekly working schedule. Also, concerning the cost estimation, the payment of the project team is formed as follows and the total cost for the project, regarding only the payment of the project team, seems to be 143.678,98 € for the 350 days of the project.

		Name	Type	Initials	Max. Units	Standard Rate	Overtime Rate	Cost Per Use
1		DIRECTOR-SUPERIOR PROJECT MANAGER	Work	D	100%	20,00 €/hour	5,00 €/hour	35,00 €
2		ENGINEER 1	Work	E1	100%	17,00 €/hour	5,00 €/hour	30,00 €
3		ENGINEER 2	Work	E2	100%	17,00 €/hour	5,00 €/hour	30,00 €
4		ENGINEER 3	Work	E3	100%	17,00 €/hour	5,00 €/hour	30,00 €
5		SENIOR SERVICES DEVELOPER	Work	SSD	100%	15,00 €/hour	4,00 €/hour	30,00 €
6		JUNIOR MANAGER 1	Work	JM1	100%	13,00 €/hour	4,00 €/hour	25,00 €
7		JUNIOR MANAGER 2	Work	JM2	100%	13,00 €/hour	4,00 €/hour	25,00 €
8		BUSINESS ANALYSTS 1	Work	BA1	100%	13,00 €/hour	4,00 €/hour	25,00 €
9		BUSINESS ANALYST 2	Work	BA2	100%	13,00 €/hour	4,00 €/hour	25,00 €
10		SECRETARY	Work	S	100%	10,00 €/hour	3,00 €/hour	25,00 €

This PM planning is theoretically applied only for the one pavilion of the whole plant that TIF-HELEXPO SA owns. The suggestion is to create a portfolio and perform the same project simultaneously at all pavilions or at as many pavilions it is required. The planning that has already be done remains the same, the project team will not have to do any additional work. The only part that changes is the human resources, the materials and the equipment that will be needed if the projects run at the same time in many pavilions. However there is the possibility to first do the project in one pavilion, check the outcome and results and if it is successful then it could also be applied to other pavilions.

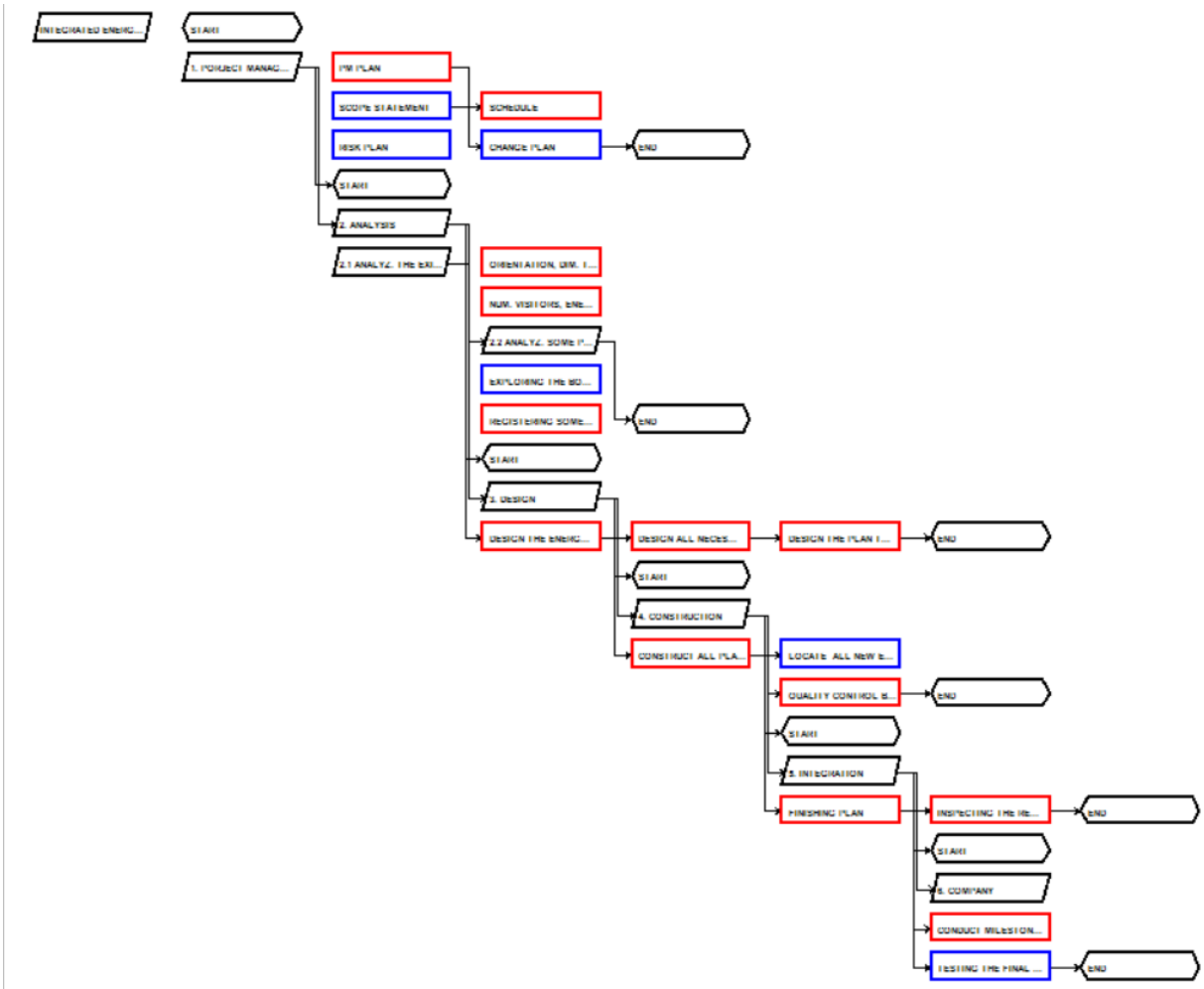
OpenProj Results

		Name	Duration	Start	Finish	Predecessors	Resource Names	Cost
1		**⊟INTEGRATED ENERGY DESIGN**	**350 days**	**1/1/2016 8:00 πμ**	**4/5/2017 5:00 μμ**			**143678,98 €**
2		START	0 days	1/1/2016 8:00 πμ	1/1/2016 8:00 πμ			0,00 €
3		**∃1. PORJECT MANAGEMENT**	**80 days**	**1/1/2016 8:00 πμ**	**21/4/2016 5:00 μμ**			**21310,48 €**
4		PM PLAN	60 days	1/1/2016 8:00 πμ	24/3/2016 5:00 μμ		DIRECTOR-SUPERIOR PROJECT MANAGER[90%];ENGINEER 1[50%];E...	5250,20 €
5		SCOPE STATEMENT	15 days	1/1/2016 8:00 πμ	21/1/2016 5:00 μμ		DIRECTOR-SUPERIOR PROJECT MANAGER;ENGINEER 1[20%];ENGINE...	1848,27 €
6		SCHEDULE	20 days	25/3/2016 8:00 πμ	21/4/2016 5:00 μμ	4;5	DIRECTOR-SUPERIOR PROJECT MANAGER;ENGINEER 1;ENGINEER 2;E...	11485,00 €
7		RISK PLAN	5 days	1/1/2016 8:00 πμ	7/1/2016 5:00 μμ		DIRECTOR-SUPERIOR PROJECT MANAGER[50%];BUSINESS ANALYSTS...	1507,50 €
8		CHANGE PLAN	4 days	25/3/2016 8:00 πμ	30/3/2016 5:00 μμ	4	DIRECTOR-SUPERIOR PROJECT MANAGER[50%];JUNIOR MANAGER 1;...	1219,50 €
9		END	0 days	30/3/2016 5:00 μμ	30/3/2016 5:00 μμ	8		0,00 €
10		START	0 days	21/4/2016 5:00 μμ	21/4/2016 5:00 μμ	3		0,00 €
11		**∃2. ANALYSIS**	**30 days**	**22/4/2016 8:00 πμ**	**2/6/2016 5:00 μμ**	**3**		**16720,00 €**
12		**∃2.1 ANALYZ. THE EXISTING FACILITIES**	**15 days**	**22/4/2016 8:00 πμ**	**12/5/2016 5:00 μμ**			**6340,00 €**
13		ORIENTATION, DIM. TECHN. CHARACTERISTICS, MATERIALS	15 days	22/4/2016 8:00 πμ	12/5/2016 5:00 μμ		JUNIOR MANAGER 1;JUNIOR MANAGER 2	3170,00 €
14		NUM. VISITORS, ENERGY DEMAND	15 days	22/4/2016 8:00 πμ	12/5/2016 5:00 μμ		JUNIOR MANAGER 1;JUNIOR MANAGER 2	3170,00 €
15		**∃2.2 ANALYZ. SOME POTENTIAL IED APPLICATIONS**	**15 days**	**13/5/2016 8:00 πμ**	**2/6/2016 5:00 μμ**	**12**		**10380,00 €**
16		EXPLORING THE BOUNADRIES OF THE PROJECT	10 days	13/5/2016 8:00 πμ	26/5/2016 5:00 μμ		ENGINEER 1;ENGINEER 2;ENGINEER 3	4170,00 €
17		REGISTERING SOME POTENTIAL ACTIONS TO HAVE ALTERNATIVES	15 days	13/5/2016 8:00 πμ	2/6/2016 5:00 μμ		ENGINEER 1;ENGINEER 2;ENGINEER 3	6210,00 €
18		END	0 days	2/6/2016 5:00 μμ	2/6/2016 5:00 μμ	15		0,00 €
19		START	0 days	2/6/2016 5:00 μμ	2/6/2016 5:00 μμ	11		0,00 €
20		**∃3. DESIGN**	**90 days**	**3/6/2016 8:00 πμ**	**6/10/2016 5:00 μμ**	**11**		**34957,50 €**
21		DESIGN THE ENERGY PLAN	30 days	3/6/2016 8:00 πμ	14/7/2016 5:00 μμ	11	ENGINEER 1;ENGINEER 2;ENGINEER 3;DIRECTOR-SUPERIOR PROJECT...	18377,50 €
22		DESIGN ALL NECESSARY RENOVATIONS	30 days	15/7/2016 8:00 πμ	25/8/2016 5:00 μμ	21	ENGINEER 1;ENGINEER 2;ENGINEER 3	10290,00 €
23		DESIGN THE PLAN TO PURCHASE ALL NECESSARY MATERIALS	30 days	26/8/2016 8:00 πμ	6/10/2016 5:00 μμ	22	JUNIOR MANAGER 1;JUNIOR MANAGER 2	6290,00 €
24		END	0 days	6/10/2016 5:00 μμ	6/10/2016 5:00 μμ	23		0,00 €
25		START	0 days	6/10/2016 5:00 μμ	6/10/2016 5:00 μμ	20		0,00 €
26		**⊒4. CONSTRUCTION**	**60 days**	**7/10/2016 8:00 πμ**	**29/12/2016 5:00 μμ**	**20**		**41512,00 €**
27		CONSTRUCT ALL PLANNED RENOVATIONS	12 days	7/10/2016 8:00 πμ	24/10/2016 5:00 μμ	20	ENGINEER 1;ENGINEER 2;ENGINEER 3;JUNIOR MANAGER 1;JUNIOR M...	7532,00 €
28		LOCATE ALL NEW EQUIPMENT (SOLAR PANELS)	45 days	25/10/2016 8:00 πμ	26/12/2016 5:00 μμ	27	JUNIOR MANAGER 2;JUNIOR MANAGER 1	9410,00 €
29		QUALITY CONTROL BY ENGINEERS THROUGH THE PROCESSES	60 days	7/10/2016 8:00 πμ	29/12/2016 5:00 μμ	27SS	ENGINEER 1;ENGINEER 2;ENGINEER 3	24570,00 €
30		END	0 days	29/12/2016 5:00 μμ	29/12/2016 5:00 μμ	29		0,00 €
31		START	0 days	29/12/2016 5:00 μμ	29/12/2016 5:00 μμ	26		0,00 €
32		**⊓5. INTEGRATION**	**60 days**	**30/12/2016 8:00 πμ**	**23/3/2017 5:00 μμ**	**26**		**23455,00 €**
33		FINISHING PLAN	30 days	30/12/2016 8:00 πμ	9/2/2017 5:00 μμ	26	DIRECTOR-SUPERIOR PROJECT MANAGER	4835,00 €
34		INSPECTING THE REULTS BY TESTING ALL NEW RENOVATIONS IN PRACTICE	30 days	10/2/2017 8:00 πμ	23/3/2017 5:00 μμ	33	BUSINESS ANALYSTS 1;BUSINESS ANALYST 2;ENGINEER 1;ENGINEER 2...	18620,00 €
35		END	0 days	23/3/2017 5:00 μμ	23/3/2017 5:00 μμ	34		0,00 €
36		START	0 days	23/3/2017 5:00 μμ	23/3/2017 5:00 μμ	32		0,00 €
37		**⊒6. COMPANY**	**30 days**	**24/3/2017 8:00 πμ**	**4/5/2017 5:00 μμ**	**32**		**5724,00 €**
38		CONDUCT MILESTONES REVIEWS	30 days	24/3/2017 8:00 πμ	4/5/2017 5:00 μμ	32	BUSINESS ANALYST 2;BUSINESS ANALYSTS 1	4730,00 €
39		TESTING THE FINAL OUTCOME	3 days	24/3/2017 8:00 πμ	28/3/2017 5:00 μμ	32	ENGINEER 1[50%];ENGINEER 2[50%];SENIOR SERVICES DEVELOPER[...	994,00 €
40		END	0 days	28/3/2017 5:00 μμ	28/3/2017 5:00 μμ	39		0,00 €

In order to perform a better interpretation of the results an informal interview-discussion with some employees from TIF-HELEXPO SA was conducted. They were positive in the sound of the idea of a PMO functioning within the company as a department. The advantage they found in the proposal of this dissertation was that in the case of a PMO, the departments would not have to worry any more for the planning and completing of projects without having the appropriate knowledge and experience. Also the Τechnical department found the idea of performing the integrated energy design in the pavilions as a portfolio innovative, since it is not so usual in Greece, and thought it would offer many benefits. Concluding, although the employees didn't have awareness about PM they were interested to learn about this management field and willing to get trained and try it.

Gantt chart

Pert chart


INTEGRATED ENERG...
START
1. PROJECT MANAG...
PM PLAN
SCOPE STATEMENT
SCHEDULE
RISK PLAN
CHANGE PLAN
END
START
2. ANALYSIS
2.1 ANALYZ. THE EXI...
ORIENTATION, DIM. I...
NUM. VISITORS, ENE...
2.2 ANALYZ. SOME P...
EXPLORING THE BO...
RECRUITING SOME...
END
START
3. DESIGN
DESIGN THE ENERG...
DESIGN ALL NECES...
DESIGN THE PLAN I...
END
START
4. CONSTRUCTION
CONSTRUCT ALL PLA...
LOCATE ALL NEW E...
QUALITY CONTROL S...
END
START
5. INTEGRATION
FINISHING PLAN
INSPECTING THE NE...
END
START
6. COMPANY
CONDUCT MILESTON...
TESTING THE FINAL ...
END

Conclusions

This dissertation had as goal to analyze the concepts of PMO and PPMO and contrast them to the Greek industry context. This was achieved in a theoretical basis through literature review and in practice by performing a project plan in a specific project. The project's case study was the integrated energy design of the plant of a Greek company. The company is TIF-HELEXPO SA and is the National Institution for the organization of exhibitions, congresses and cultural events. The project management was planned in the software OpenProj planning the time schedule and the cost of the project. The project will be applied at first in the one pavilion of the company and thereafter in all the others to. The suggestion was to incorporate a PMO within the company to be responsible for all projects. This PMO could also function as a PPMO like in the case study of the specific dissertation. The results were positive regarding both the theoretical application and the opinions of the employees who were informally requested on the results.

The aim is PM to become the next management field that is going to be applied in the Greek industries. The advantages of using PM and specifically PMOs are many and could assist Greek organizations to get organized, planning exactly the time schedule, costs and resources. This could aid organizations in order to overcome the economic recession and remain viable until the recovery of the whole country.

The outcome from the literature research was that employees in Greek companies that offer mainly services are not familiar with the concepts of project management, while in the whole world it is extensively used assisting to the project performance and in general the company's performance.

The potential future research that could be done in the specific topic can be the analysis of the results of the actual application and implementation of the project. Then the results will be more accurate and will be considered as a part of the Greek companies' literature review concerning PMO and PPMO.

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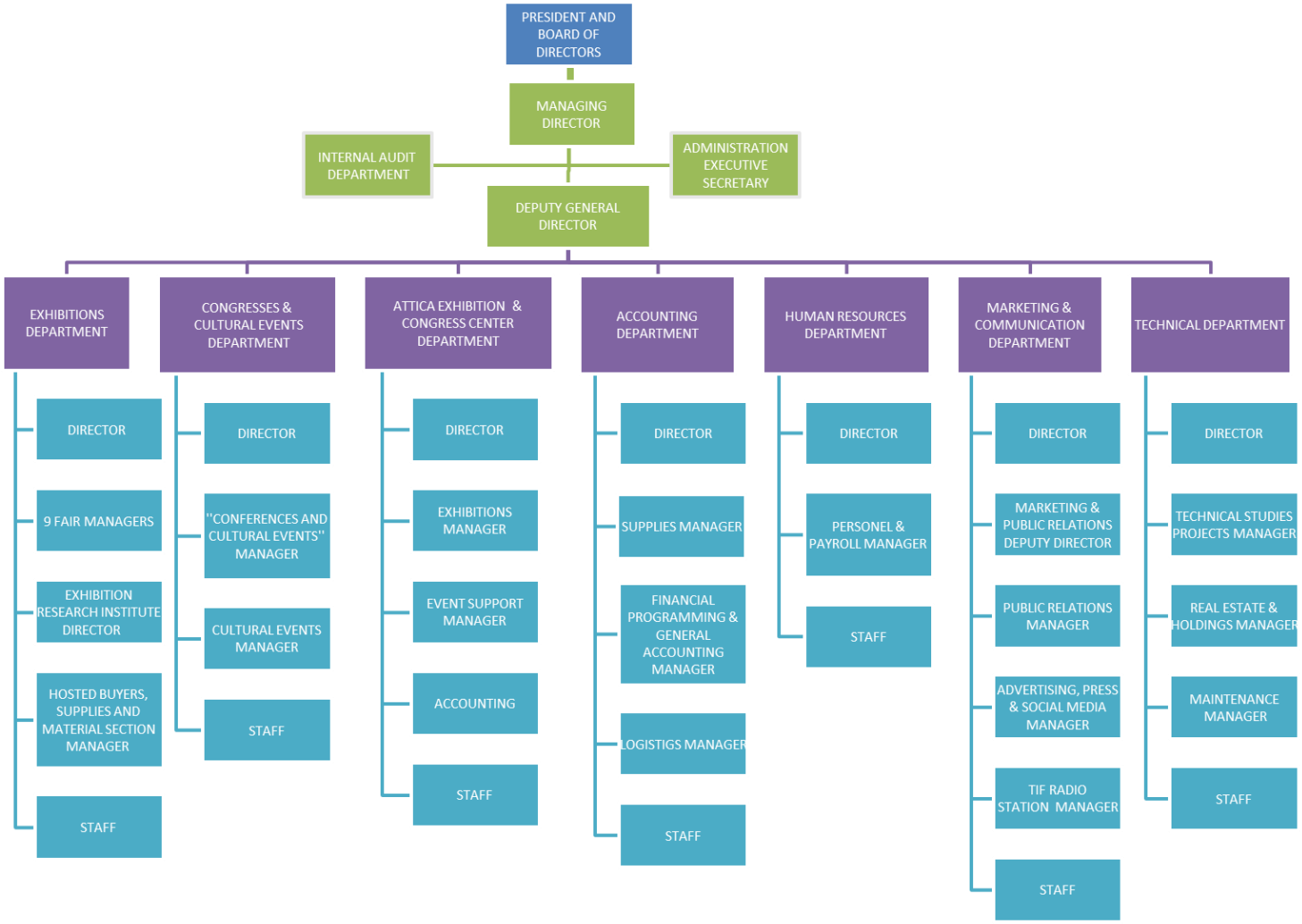
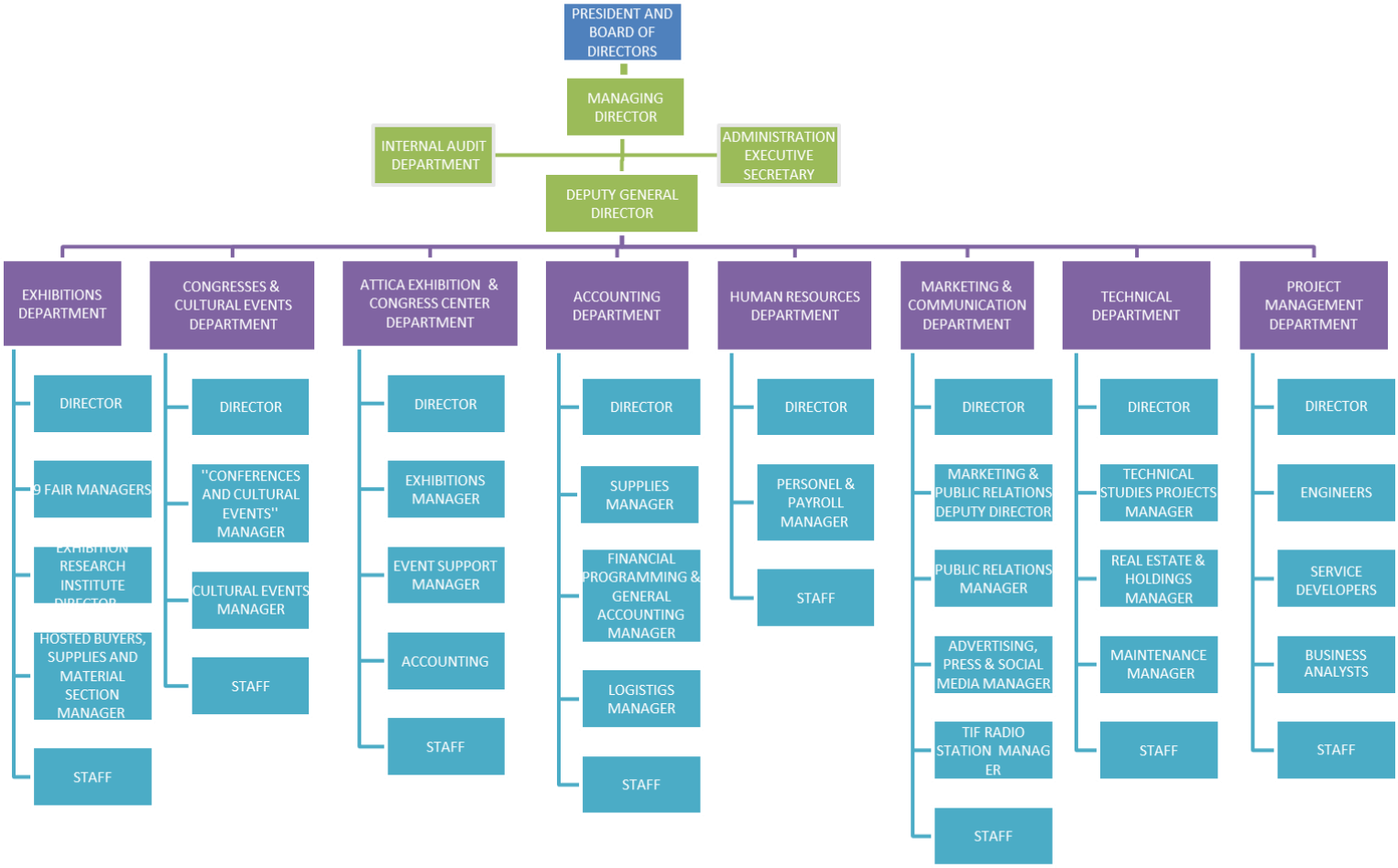
Appendix

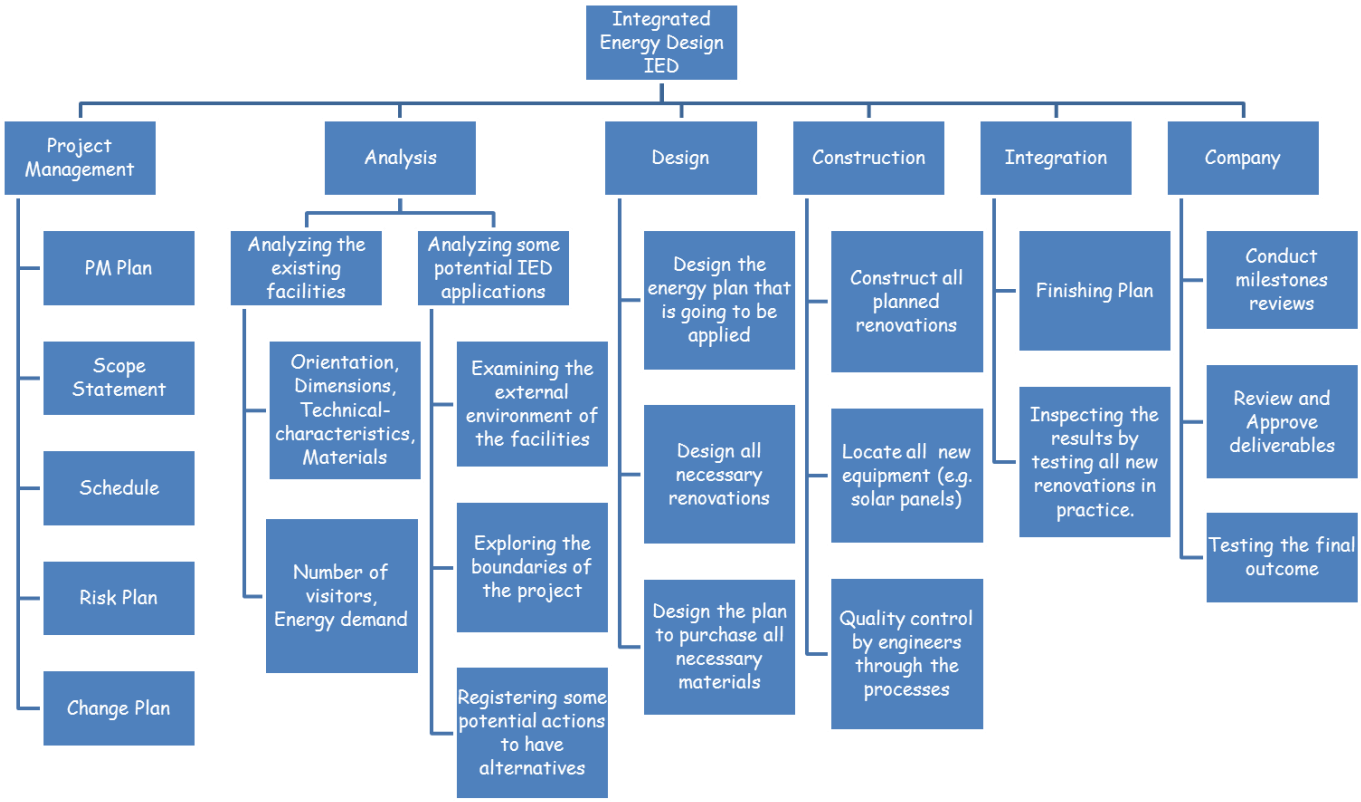
Organizational chart of TIF-HELEXPO SA



Matrix organization



List of deliverables and milestones – WBS



Communication Plan Matrix

COMPANY	WHAT INFORMATION DO THEY NEED?	FREQUENCY	MEDIUM	RESPONCE
DIRECTOR-SUPERIOR PROJECT MANAGER	COST, SCHEDULE , PERFORMANCE, PROBLEMS	WEEKLY	MEETING AND WRIT-EN REPORT	REQUIRED IN 3 DAYS
3 ENGINEERS	COST, SCHEDULE, PROBLEMS, PRO-POSED ACTIONS, DESIGN	WEEKLY	WRITTEN REPORT	REQUIRED IN 5 DAYS
1 SENIOR SERVICES DEVELOPER	SCHEDULE, ACTIONS, HOW THE PRO-JECT PROGRESSES	EVERY TWO WEEKS	REPORT	
2 JUNIOR MANAG-ERS	SCHEDULE,INFORMATION, DESIGN, SCOPE	EVERY THREE WEEKS	REPORT	
2 BUSINESS ANA-LYSTS	COST, QUALITY PERFORMANCE, RE-QUIRED ACTIONS, TESTING FEEDBACK	WEEKLY	MEETING	REQUIRED IN 5 DAYS
SECRETARY	SCHEDULE, ACTIONS	WEEKLY	REPORT	

Responsibility Matrix

ACTIVITY	DIRECTOR-SUPERIOR PROJECT MANAGER	3 ENGINEERS	1 SENIOR SERVICES DEVELOPER	2 JUNIOR MAN-AGERS	2 BUSINESS ANALYSTS	SECRETARY
PROJECT MANAGEMENT						
PM PLAN	**R/E**	**R/E**	**C**	**C**	**C**	**I**
SCOPE STATEMENT	**R/E**	**C**	**I**	**C**	**C**	**I**
SCHEDULE	**R/E**	**R/E**	**I**	**A**	**I**	**I**
RISK PLAN	**R/E**	**C**	**I**	**C**	**R/E**	**I**
CHANGE PLAN	**R/E**	**A**	**I**	**R/E**	**C**	**I**
ANALYSIS						
ANALYZ. THE EXISTING FACILITIES	**A**	**I**	**I**	**R/E**	**I**	**I**
ORIENTATION, DIM. TECHN. CHARACTERISTICS, MA-TERIALS	**A**	**I**	**I**	**R/E**	**I**	**I**
NUM. VISITORS, ENERGY DEMAND	**A**	**I**	**I**	**R/E**	**I**	**I**
ANALYZ. SOME POTENTIAL IED APPLICATIONS	**A**	**R/E**	**I**	**C**	**I**	**I**
EXAMINING THE EXTERNAL ENVIRONMENT OF THE FACILITIES	**A**	**R/E**	**I**	**C**	**I**	**I**
EXPLORING THE BOUNADRIES OF THE PROJECT	**A**	**R/E**	**I**	**C**	**I**	**I**
REGISTERING SOME POTENTIAL ACTIONS TO HAVE ALTERNATIVES	**A**	**R/E**	**I**	**C**	**I**	**I**
DESIGN						

DESIGN THE ENERGY PLAN	**A**	**R/E**	**R/E**	**C**	**I**	**I**
DESIGN ALL NECESSARY RENOVATIONS	**A**	**R/E**	**R/E**	**R/E**	**C**	**I**
DESIGN THE PLAN TO PURCHASE ALL NECESSARY MATERIALS	**C**	**A**	**I**	**R/E**	**I**	**I**
CONSTRUCTION						
CONSTRUCT ALL PLANNED RENOVATIONS	**A**	**R/E**	**I**	**R/E**	**I**	**I**
LOCATE ALL NEW EQUIPMENT (SOLAR PANELS)	**A**	**A**	**I**	**R/E**	**I**	**I**
QUALITY CONTROL BY ENGINEERS THROUGH THE PROCESSES	**A**	**R/E**	**I**	**I**	**I**	**I**
INTEGRATION						
FINISHING PLAN	**R/E**	**C**	**C**	**C**	**C**	**I**
INSPECTING THE REULTS BY TESTING ALL NEW RENOVATIONS IN PRACTICE	**A**	**R/E**	**C**	**C**	**R/E**	**I**
COMPANY						
CONDUCT MILESTONES REVIEWS	**A**	**C**	**I**	**C**	**R/E**	**I**
TESTING THE FINAL OUTCOME	**A**	**R/E**	**I**	**I**	**R/E**	**I**

R/E: responsible for execution, A: approval, C: must be consulted, I: must be informed

OpenProj Results

		Name	Duration	Start	Finish	Predecessors	Resource Names	Cost
1		**⊟INTEGRATED ENERGY DESIGN**	**350 days**	**1/1/2016 8:00 πμ**	**4/5/2017 5:00 μμ**			**143678,98 €**
2		START	0 days	1/1/2016 8:00 πμ	1/1/2016 8:00 πμ			0,00 €
3		**∃1. PORJECT MANAGEMENT**	**80 days**	**1/1/2016 8:00 πμ**	**21/4/2016 5:00 μμ**			**21310,48 €**
4		PM PLAN	60 days	1/1/2016 8:00 πμ	24/3/2016 5:00 μμ		DIRECTOR-SUPERIOR PROJECT MANAGER[90%];ENGINEER 1[50%];E...	5250,20 €
5		SCOPE STATEMENT	15 days	1/1/2016 8:00 πμ	21/1/2016 5:00 μμ		DIRECTOR-SUPERIOR PROJECT MANAGER;ENGINEER 1[20%];ENGINE...	1848,27 €
6		SCHEDULE	20 days	25/3/2016 8:00 πμ	21/4/2016 5:00 μμ	4;5	DIRECTOR-SUPERIOR PROJECT MANAGER;ENGINEER 1;ENGINEER 2;E...	11485,00 €
7		RISK PLAN	5 days	1/1/2016 8:00 πμ	7/1/2016 5:00 μμ		DIRECTOR-SUPERIOR PROJECT MANAGER[50%];BUSINESS ANALYSTS...	1507,50 €
8		CHANGE PLAN	4 days	25/3/2016 8:00 πμ	30/3/2016 5:00 μμ	4	DIRECTOR-SUPERIOR PROJECT MANAGER[50%];JUNIOR MANAGER 1;...	1219,50 €
9		END	0 days	30/3/2016 5:00 μμ	30/3/2016 5:00 μμ	8		0,00 €
10		START	0 days	21/4/2016 5:00 μμ	21/4/2016 5:00 μμ	3		0,00 €
11		**∃2. ANALYSIS**	**30 days**	**22/4/2016 8:00 πμ**	**2/6/2016 5:00 μμ**	**3**		**16720,00 €**
12		**∃2.1 ANALYZ. THE EXISTING FACILITIES**	**15 days**	**22/4/2016 8:00 πμ**	**12/5/2016 5:00 μμ**			**6340,00 €**
13		ORIENTATION, DIM. TECHN. CHARACTERISTICS, MATERIALS	15 days	22/4/2016 8:00 πμ	12/5/2016 5:00 μμ		JUNIOR MANAGER 1;JUNIOR MANAGER 2	3170,00 €
14		NUM. VISITORS, ENERGY DEMAND	15 days	22/4/2016 8:00 πμ	12/5/2016 5:00 μμ		JUNIOR MANAGER 1;JUNIOR MANAGER 2	3170,00 €
15		**∃2.2 ANALYZ. SOME POTENTIAL IED APPLICATIONS**	**15 days**	**13/5/2016 8:00 πμ**	**2/6/2016 5:00 μμ**	**12**		**10380,00 €**
16		EXPLORING THE BOUNADRIES OF THE PROJECT	10 days	13/5/2016 8:00 πμ	26/5/2016 5:00 μμ		ENGINEER 1;ENGINEER 2;ENGINEER 3	4170,00 €
17		REGISTERING SOME POTENTIAL ACTIONS TO HAVE ALTERNATIVES	15 days	13/5/2016 8:00 πμ	2/6/2016 5:00 μμ		ENGINEER 1;ENGINEER 2;ENGINEER 3	6210,00 €
18		END	0 days	2/6/2016 5:00 μμ	2/6/2016 5:00 μμ	15		0,00 €
19		START	0 days	2/6/2016 5:00 μμ	2/6/2016 5:00 μμ	11		0,00 €
20		**∃3. DESIGN**	**90 days**	**3/6/2016 8:00 πμ**	**6/10/2016 5:00 μμ**	**11**		**34957,50 €**
21		DESIGN THE ENERGY PLAN	30 days	3/6/2016 8:00 πμ	14/7/2016 5:00 μμ	11	ENGINEER 1;ENGINEER 2;ENGINEER 3;DIRECTOR-SUPERIOR PROJECT...	18377,50 €
22		DESIGN ALL NECESSARY RENOVATIONS	30 days	15/7/2016 8:00 πμ	25/8/2016 5:00 μμ	21	ENGINEER 1;ENGINEER 2;ENGINEER 3	10290,00 €
23		DESIGN THE PLAN TO PURCHASE ALL NECESSARY MATERIALS	30 days	26/8/2016 8:00 πμ	6/10/2016 5:00 μμ	22	JUNIOR MANAGER 1;JUNIOR MANAGER 2	6290,00 €
24		END	0 days	6/10/2016 5:00 μμ	6/10/2016 5:00 μμ	23		0,00 €
25		START	0 days	6/10/2016 5:00 μμ	6/10/2016 5:00 μμ	20		0,00 €
26		**⊒4. CONSTRUCTION**	**60 days**	**7/10/2016 8:00 πμ**	**29/12/2016 5:00 μμ**	**20**		**41512,00 €**
27		CONSTRUCT ALL PLANNED RENOVATIONS	12 days	7/10/2016 8:00 πμ	24/10/2016 5:00 μμ	20	ENGINEER 1;ENGINEER 2;ENGINEER 3;JUNIOR MANAGER 1;JUNIOR M...	7532,00 €
28		LOCATE ALL NEW EQUIPMENT (SOLAR PANELS)	45 days	25/10/2016 8:00 πμ	26/12/2016 5:00 μμ	27	JUNIOR MANAGER 2;JUNIOR MANAGER 1	9410,00 €
29		QUALITY CONTROL BY ENGINEERS THROUGH THE PROCESSES	60 days	7/10/2016 8:00 πμ	29/12/2016 5:00 μμ	27SS	ENGINEER 1;ENGINEER 2;ENGINEER 3	24570,00 €
30		END	0 days	29/12/2016 5:00 μμ	29/12/2016 5:00 μμ	29		0,00 €
31		START	0 days	29/12/2016 5:00 μμ	29/12/2016 5:00 μμ	26		0,00 €
32		**⊓5. INTEGRATION**	**60 days**	**30/12/2016 8:00 πμ**	**23/3/2017 5:00 μμ**	**26**		**23455,00 €**
33		FINISHING PLAN	30 days	30/12/2016 8:00 πμ	9/2/2017 5:00 μμ	26	DIRECTOR-SUPERIOR PROJECT MANAGER	4835,00 €
34		INSPECTING THE REULTS BY TESTING ALL NEW RENOVATIONS IN PRACTICE	30 days	10/2/2017 8:00 πμ	23/3/2017 5:00 μμ	33	BUSINESS ANALYSTS 1;BUSINESS ANALYST 2;ENGINEER 1;ENGINEER 2...	18620,00 €
35		END	0 days	23/3/2017 5:00 μμ	23/3/2017 5:00 μμ	34		0,00 €
36		START	0 days	23/3/2017 5:00 μμ	23/3/2017 5:00 μμ	32		0,00 €
37		**⊒6. COMPANY**	**30 days**	**24/3/2017 8:00 πμ**	**4/5/2017 5:00 μμ**	**32**		**5724,00 €**
38		CONDUCT MILESTONES REVIEWS	30 days	24/3/2017 8:00 πμ	4/5/2017 5:00 μμ	32	BUSINESS ANALYST 2;BUSINESS ANALYSTS 1	4730,00 €
39		TESTING THE FINAL OUTCOME	3 days	24/3/2017 8:00 πμ	28/3/2017 5:00 μμ	32	ENGINEER 1[50%];ENGINEER 2[50%];SENIOR SERVICES DEVELOPER[...	994,00 €
40		END	0 days	28/3/2017 5:00 μμ	28/3/2017 5:00 μμ	39		0,00 €

		Name	Type	Initials	Max. Units	Standard Rate	Overtime Rate	Cost Per Use
1		DIRECTOR-SUPERIOR PROJECT MANAGER	Work	D	100%	20,00 €/hour	5,00 €/hour	35,00 €
2		ENGINEER 1	Work	E1	100%	17,00 €/hour	5,00 €/hour	30,00 €
3		ENGINEER 2	Work	E2	100%	17,00 €/hour	5,00 €/hour	30,00 €
4		ENGINEER 3	Work	E3	100%	17,00 €/hour	5,00 €/hour	30,00 €
5		SENIOR SERVICES DEVELOPER	Work	SSD	100%	15,00 €/hour	4,00 €/hour	30,00 €
6		JUNIOR MANAGER 1	Work	JM1	100%	13,00 €/hour	4,00 €/hour	25,00 €
7		JUNIOR MANAGER 2	Work	JM2	100%	13,00 €/hour	4,00 €/hour	25,00 €
8		BUSINESS ANALYSTS 1	Work	BA1	100%	13,00 €/hour	4,00 €/hour	25,00 €
9		BUSINESS ANALYST 2	Work	BA2	100%	13,00 €/hour	4,00 €/hour	25,00 €
10		SECRETARY	Work	S	100%	10,00 €/hour	3,00 €/hour	25,00 €

Gantt chart

Pert chart